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CURRENT LITERATURE

BOOK REVIEWS

The genera of fungi

Several years ago Professor CLEMENTS began a translation of the keys to the genera of fungi in the original eight volumes of SACCARDO's *Sylloge Fungorum*, and this has now resulted in a book.¹ With the appearance of a large number of new genera in the subsequent volumes, the keys have been arranged on an entirely different plan from that found in the *Sylloge*, although the spore sections based on the color, shape, and septation of the spores have been retained. In the case of certain groups, the arrangement differs from that found in the *Sylloge*, as well as from that generally followed; for example, the bacteria are included among the Phycomycetes, the Uredinales and Ustilaginales among the Ascomycetes. The reviewer has taken some pains to test certain portions of the key. In most of the cases tried, one would have been led astray, unless the plant were already known, and even then, were the key followed literally, the plant would often reach the wrong genus, if not the wrong group. For example, the first two paragraphs in the key are supposed to enable the student to determine whether a plant belongs in the Phycomycetes or in the second division. If the plant to be named is a *Peziza*, and if the student knows it is an ascomycete, he would not need the key; but if he did not know this, he would certainly place it in the Phycomycetes if he depended on the words of the key, having in mind the structures usually present in the perfect fruit body of an ascomycete. On examining a teleutospore, or other spore form of the Uredinales or Ustilaginales, who would recognize it as an ascus, or any structure in these orders as an ascomycetous structure, unless he already knew it? One must have a good knowledge of fungi before a key of this kind becomes very useful, and then the keys to the general subdivisions would not be necessary. Diagnostic characters for the general subdivisions would be more helpful. In this respect SACCARDO's keys to the genera are useful, since they are at the same time diagnostic.

A few of the inaccuracies may be mentioned. The key to the Myxobacteriaceae (p. 8) is incorrect in the statement "cells finally forming rows of globose spores" in *Myxococcus*, since each rodlike cell forms a single spore (see THAXTER, BOT. GAZETTE 23:400. 1897). The key to the Cladochytriae is incorrect, since there are species which possess both resting sporangia and zoosporangia. Not all the Syncephalidae form zygospores above conjugating progametes, as stated in the key, even in *Piptocephalis*. The key further says

¹ CLEMENTS, FREDERIC EDWARD, The genera of fungi. 8vo. pp. 227. Minneapolis: The H. W. Wilson Company. 1909.

"conidia in chains." The spores are borne in sporangial filaments (see THAXTER, BOT. GAZETTE 24:1-15. 1897). In Leptomitae there is a confusion of distinctions. "Naegeliella" should be Sapromyces (see FRITSCH, Oesterr. Bot. Zeits. 43:420. 1893). Araispora of THAXTER is changed to "Araeospora," whether by a typographical error or because of "faulty composition," we are not told. Gonopodya and Myrioblepharis are incorrectly placed in the Monoblepharidaceae; the former is leptomitaceous, while the latter is pythiaceous. The genus Diblepharis does not exist (see THAXTER, Rhodora 5:103. 1903); and so on. Some of the good genera omitted from the higher Phycomycetes are Cunninghamella, Thamnocephalis, Zygorhynchus, Proabsidia, Lichtheimia, Mycocladius, Tieghemella, Sapromyces, etc. The author has revised THAXTER'S arrangement of the Laboulbeniales, and one of the first things to be noticed is that Stichomyces, with simple antheridia, is placed in the group which is characterized by compound antheridia.

"Subfamily Harpochytriae" on p. 11, and "Harpochytrium" as one of the genera is probably a slip for Hyphochytriaceae and Hyphochytrium. On p. 47 something seems to be omitted after the line "Stroma on a white subicle," unless it indicates a hypothetical group.

Although the author says that "questions of nomenclature have been left largely to one side," a large number of new names are proposed for genera, in many cases as substitute names for already existing valid ones. For example, where a generic name is longer than the author thinks it should be, he shortens it; Dimerosporopsis is changed to Dimerosporis, Trematosphaeriopsis to Trematosphaeris, Hyaletyridium to Hyalothyris, Gymnoascus to Gymnascus, Exoascus to Exascus, etc. Objection is made also to the use of generic names of "faulty composition," and many names are changed to conform to an adopted standard of word-formation; thus, Tremellopsis is changed to Tremellastrum, Coleopuccinia to Coleoma, Oscarbrefeldia to Ascodes, Podosordaria to Pedisordaria, Aureobasidium to Chrysobasidium, etc., while Tremellodon, for example, is allowed to stand. It may be admitted that authors of long generic names should have selected shorter ones, and should have used greater care in word-formation, but if we recognize CLEMENTS'S principles of nomenclature, we must accept them from anyone who chooses to change the spelling of genera or to substitute new generic names for any of the present valid ones. It requires very little imagination to foresee the result of such a policy. The object in adopting principles of botanical nomenclature is to secure as uniform methods in naming plants as possible. The name is merely a medium of exchange by which we convey to others the concept of the organism with which we are dealing, and a name employed in accordance with principles adopted by an international representative assembly of botanists is more useful than an invalid name.

Besides the large number of arbitrary changes in generic names, a large number of new generic names are proposed without any diagnosis other than the few differential words used in the key. Some have a better basis, perhaps, than others. Two which were examined at random will show on what very insufficient

grounds some of them, at least, are founded. *Iotidea* is proposed as a genus for *Otidea pleurota* (Phillips) Rehm (*Peziza pleurota* Phill.) on the ground that the tips of the asci are stained blue with iodine, while in the other species of *Otidea* (in the sense of REHM, Rabenh. Krypt. Fl. Pilze 3:1023. 1896) the ascus usually is not stained blue with iodine. By students of the Discomycetes this character is regarded at most merely as a specific character, and some of our best students (including PHILLIPS) regard it as a variable one and do not place great stress upon it as a crucial test of specific difference.² *Belospora* is proposed as a genus for *Belonioscypha ciliatospora* (Fuckel) Rehm, *ibid.* 744 (*Ciboria ciliatospora* Fuckel), on the ground of the presence of a cilium at each end of the spore. Later REHM (*ibid.* 1267) says that BRESADOLA justly regards this species as only a young form of *Helotium scutula*, the cilia soon disappearing and the spores becoming divided.

Quite a number of genera have been included in others, but this is done "only for the sake of the beginner, when the descriptions reveal no differences." In some of the genera so treated the differences indicated are certainly greater than those on which some of the new genera are based. *Lloydia*, for example, is included in *Hymenochaete*, although the differences are clearly indicated. Whether *Lloydia* is a valid genus may be questioned, but it certainly does not bear so close a relationship to *Hymenochaete* as it does to *Stereum*, on certain species of which it was based because of the presence of hyaline cystidia, while *Hymenochaete* possesses colored setae.

There is a convenience in having the genera in all of the volumes of SACCARDO's *Sylloge* brought together for reference. The glossary of Latin and English terms, covering 28 pages, will be of great value to students using SACCARDO's work, who have not a good command of Latin.—GEO. F. ATKINSON.

A new laboratory manual

FRYE and RIGG have met their local needs, and perhaps more general needs as well, by the publication of a laboratory manual.³ The outlines are the outcome of a test of two years, and they are now being used in the university with students who have not had botany in high school. Both authors have had experience in high schools, and should be able to judge what is suited to high-school pupils; both have been students of the botany of the northwest for some years, and should know what material is to be recommended for elementary classes.

The course is divided into two parts: the vegetative organs of vascular plants, and types of the larger groups of plants. The first section treats of leaves, stems, roots, seeds, and the relation of plants to their environment; while in the second the usual four groups are presented. In the first four topics of the first section the exercises are those usually found in this connection, but in the last one there

² See COOKE, M. C., Observations on *Peziza calycina*. Grev. 4:169-172. 1876.

³ FRYE, T. C., AND RIGG, GEO. B., Laboratory exercises in elementary botany based on the plants of the Pacific Northwest. pp. 75. Seattle: University Book Store. 1909.